In the Claims

1. (original) A device comprising:

an actuator able to support a head adjacent to a rotatable disc; and

a position detector constructed and arranged to determine a head's former stationary position relative to the disc based on a latter motion pattern of the actuator.

2. (original) The device of claim 1 in which the position detector essentially consists of:

a first portion being a voice coil; and

a second portion operatively coupled to the voice coil and rigidly mounted to a controller board.

3. (original) The device of claim 1 further comprising a latch configured to urge the actuator toward a predetermined position.

4. (original) The device of claim 1 further comprising at least one crash stop configured to limit a range of motion of the actuator.

5. (original) The device of claim 1 in which the head's former stationary position consists of one Boolean value.

6. (original) The device of claim 1 in which the position detector includes a processor configured to receive several voltage measurements and to derive the head's former stationary position partly based on an arithmetic combination of the measurements.

7. (original) The device of claim 1 in which the position detector includes a processor coupled to a memory containing a program that enables the processor to perform steps of:

(a) spinning up the disc;

(b) detecting the latter motion pattern after the spin-up step (a); and

(c) generating a digital indication of where the head was just before the spin-up step (a) partly based on the latter motion pattern.

8. (original) The device of claim 1 in which the actuator supports a plurality of additional heads adjacent at least one additional disc, the discs being mounted for co-rotation on a disc stack.

9. (original) The device of claim 1 in which the actuator includes a voice coil configured to provide a voltage to the position detector that includes a back-electromotive force component indicative of a movement of the voice coil across a magnetic field.

10. (original) The device of claim 9 in which the position detector includes an analog-to-digital converter operatively coupled across the voice coil and configured to sample the voltage provided by the voice coil.

11. (original) A method comprising steps of:

(a) spinning up a data storage disc; and

(b) generating a digital indication of where a head was just before the spin-up step (a) partly based on a head-arm actuator motion pattern detected after the spin-up step (a).

12. (original) The method of claim 11 in which the spinning up step (a) includes a step (a1) of mounting a disc stack comprising the data storage disc with an axis of rotation so that the head is adjacent a major disc surface of the disc and so that the head has a limited range of motion that includes innermost and outermost head positions relative to the axis of rotation.

13. (original) The method of claim 11 in which the generating step (b) includes steps of:

(b1) increasing a voice coil motor (VCM) current magnitude through a voice coil of the actuator substantially linearly to a maximum value;

(b2) decreasing the VCM current magnitude substantially linearly to about zero; and

(b3) computing the digital indication partly based on several voltage measurements taken across the voice coil before completing the decreasing step (b2).

14. (original) The method of claim 13, further comprising a step of taking at least some of the

several voltage measurements after the increasing step (b1) but before the decreasing step (b2).

15. (withdrawn) The method of claim 11 in which the spin-up step (a) includes a step of accelerating from a stop to a predetermined disc rotation speed without applying any actuator-urging electrical signal.

16. (original) The method of claim 11 in which the generating step (b) includes a step (b1) of computing the digital indication partly based on a back electromotive force measured across a voice coil.

17. (original) The method of claim 11 in which the generating step (b) includes a step (b1) of seeking toward a first end-most position of the head.

18. (original) The method of claim 17 in which the generating step (b) further includes a step (b2) of estimating a resistance partly based on several measurements taken during the seeking step (b1).

19. (original) The method of claim 11, further comprising a prior step of parking the head on the data storage disc.

20. (original) The method of claim 11 in which the generating step (b) includes a step (b1) of indicating whether the detected motion pattern met a predetermined motion pattern criterion.

21. (original) The method of claim 11 in which the generating step (b) includes a step (b1) of indicating whether the head was parked normally just before the spin-up step (a).

22. (original) The method of claim 11 in which the generating step (b) consists of steps of:

(b1) generating a scalar measure of how far the head was from a reference position; and

(b2) generating the digital indication as a Boolean value indicating whether the scalar measure

exceeds a predetermined threshold.

23. (withdrawn) The method of claim 11 in which the generating step (b) includes steps of:

(b1) applying a force that is oppositely directed to and smaller than a nominal latching force; and

(b2) generating the digital indication as a Boolean value indicating whether an actuator acceleration occurs.

24. (original) The method of claim 11 further comprising a step © of deciding whether to search for a failure mechanism on a surface of the disc based on the digital indication.

25. (original) The method of claim 11 further comprising steps of:

(c) deciding whether to search for an improvement for a manufacturing process at least partly based on the digital indication; and

(d) using the manufacturing process for assembling a multitude of other data storage discs into devices, after the deciding step (c).

26. (withdrawn) The method of claim 11 in which the spinning up step (a) includes a step (a1) of biasing the actuator with at most a few milliamperes as the disc reaches a nominal rotation speed.

27. (original) The method of claim 11 further comprising a step of calibrating a digital offset so as to compensate for a back electromotive force, before beginning the spinning up step (a).

28. (original) A method comprising steps of:

(a) mounting a disc stack with an axis of rotation so that a head of a rotary actuator is adjacent a major disc surface of the disc stack and so that the head has a limited range of motion relative to the disc stack;

(b) spinning up the disc stack;

(c) increasing a magnitude of a current through a voice coil of the actuator so that the head

moves toward an end-most head position of the range of motion from the mounting step (a);

(d) taking several voltage measurements across the voice coil while the head moves; and

(e) comparing an arithmetic combination of the voltage measurements from the taking step (d) against a predetermined threshold so as to indicate whether the head was in a normal parking position just before the spin-up step (b).

29. (original) The method of claim 28 in which the mounting step (a) includes a step (a1) of parking the head on a textured portion of the major disc surface.